

| layer   | module type | plane type | material     | section               | Module No. | Scint Plane No. | Group No. |
|---------|-------------|------------|--------------|-----------------------|------------|-----------------|-----------|
| 0       | iron        | 1" steel   | iron         | Veto                  | 0          |                 |           |
| 0       | veto        | veto       | thick scint  |                       | 0          |                 |           |
| 0       | veto        | veto       | thick scint  |                       | 0          |                 |           |
| 1       | Target #1   | Target     | Pb & STL     | Nuclear target region | 1          |                 |           |
| 2       | Standard    | u          |              |                       | 2          | 1               | 1         |
| 3       | Standard    | x          |              |                       | 2          | 2               |           |
| 4       | Standard    | v          |              |                       | 3          | 3               |           |
| 5       | Standard    | x          |              |                       | 3          | 4               |           |
| 6       | Standard    | u          |              |                       | 4          | 5               | 2         |
| 7       | Standard    | x          |              |                       | 4          | 6               |           |
| 8       | Standard    | v          |              |                       | 5          | 7               |           |
| 9       | Standard    | x          |              |                       | 5          | 8               |           |
| 10      | Target #2   | Target     | Pb & STL     |                       | 6          |                 |           |
| 11      | Standard    | u          |              | Active Target Region  | 7          | 9               | 3         |
| 12      | Standard    | x          |              |                       | 7          | 10              |           |
| 13      | Standard    | v          |              |                       | 8          | 11              |           |
| 14      | Standard    | x          |              |                       | 8          | 12              |           |
| 15      | Standard    | u          |              |                       | 9          | 13              | 4         |
| 16      | Standard    | x          |              |                       | 9          | 14              |           |
| 17      | Standard    | v          |              |                       | 10         | 15              |           |
| 18      | Standard    | x          |              |                       | 10         | 16              |           |
| 19 & 20 | Target #3   | Target     | C, Pb, & STL |                       | 11 & 12    |                 |           |
| 21      | Standard    | u          |              |                       | 13         | 17              |           |
| 22      | Standard    | x          |              | Pb                    | 13         | 18              | 5         |
| 23      | Standard    | v          |              |                       | 14         | 19              |           |
| 24      | Standard    | x          |              |                       | 14         | 20              |           |
| 25      | Standard    | u          |              |                       | 15         | 21              | 6         |
| 26      | Standard    | x          |              |                       | 15         | 22              |           |
| 27      | Standard    | v          |              |                       | 16         | 23              |           |
| 28      | Standard    | x          |              |                       | 16         | 24              |           |
| 29      | Target #4   | Target     | Pb           |                       | 17         |                 |           |
| 30      | Standard    | u          |              | Pb & STL              | 18         | 25              | 7         |
| 31      | Standard    | x          |              |                       | 18         | 26              |           |
| 32      | Standard    | v          |              |                       | 19         | 27              |           |
| 33      | Standard    | x          |              |                       | 19         | 28              |           |
| 34      | Standard    | u          |              |                       | 20         | 29              | 8         |
| 35      | Standard    | x          |              |                       | 20         | 30              |           |
| 36      | Standard    | v          |              |                       | 21         | 31              |           |
| 37      | Standard    | x          |              |                       | 21         | 32              |           |
| 38      | Target #5   | Target     | Pb & STL     |                       | 22         |                 |           |
| 39      | Standard    | u          |              | Pb                    | 23         | 33              |           |
| 40      | Standard    | x          |              |                       | 23         | 34              |           |
| 41      | Standard    | v          |              |                       | 24         | 35              |           |
| 42      | Standard    | x          |              |                       | 24         | 36              |           |
| 43      | Standard    | u          |              |                       | 25         | 37              | 10        |
| 44      | Standard    | x          |              |                       | 25         | 38              |           |
| 45      | Standard    | v          |              |                       | 26         | 39              |           |
| 46      | Standard    | x          |              |                       | 26         | 40              |           |
| 47      | Standard    | u          |              |                       | 27         | 41              | 11        |
| 48      | Standard    | x          |              |                       | 27         | 42              |           |
| 49      | Standard    | v          |              | Pb                    | 28         | 43              |           |
| 50      | Standard    | x          |              |                       | 28         | 44              |           |
| 51      | Standard    | u          |              |                       | 29         | 45              | 12        |
| 52      | Standard    | x          |              |                       | 29         | 46              |           |
| 53      | Standard    | v          |              |                       | 30         | 47              |           |
| 54      | Standard    | x          |              |                       | 30         | 48              |           |
| 55      | Standard    | u          |              |                       | 31         | 49              | 13        |
| 56      | Standard    | x          |              |                       | 31         | 50              |           |
| 57      | Standard    | v          |              |                       | 32         | 51              |           |
| 58      | Standard    | x          |              |                       | 32         | 52              |           |
| 59      | Standard    | u          |              | Pb                    | 33         | 53              | 14        |
| 60      | Standard    | x          |              |                       | 33         | 54              |           |
| 61      | Standard    | v          |              |                       | 34         | 55              |           |
| 62      | Standard    | x          |              |                       | 34         | 56              |           |
| 63      | Standard    | u          |              |                       | 35         | 57              | 15        |
| 64      | Standard    | x          |              |                       | 35         | 58              |           |
| 65      | Standard    | v          |              |                       | 36         | 59              |           |
| 66      | Standard    | x          |              |                       | 36         | 60              |           |
| 67      | Standard    | u          |              |                       | 37         | 61              | 16        |
| 68      | Standard    | x          |              |                       | 37         | 62              |           |
| 69      | Standard    | v          |              | Pb                    | 38         | 63              |           |
| 70      | Standard    | x          |              |                       | 38         | 64              |           |
| 71      | Standard    | u          |              |                       | 39         | 65              | 17        |
| 72      | Standard    | x          |              |                       | 39         | 66              |           |
| 73      | Standard    | v          |              |                       | 40         | 67              |           |
| 74      | Standard    | x          |              |                       | 40         | 68              |           |
| 75      | Standard    | u          |              |                       | 41         | 69              | 18        |
| 76      | Standard    | x          |              |                       | 41         | 70              |           |
| 77      | Standard    | v          |              |                       | 42         | 71              |           |
| 78      | Standard    | x          |              |                       | 42         | 72              |           |
| 79      | Standard    | u          |              | Pb                    | 43         | 73              | 19        |
| 80      | Standard    | x          |              |                       | 43         | 74              |           |
| 81      | Standard    | v          |              |                       | 44         | 75              |           |
| 82      | Standard    | x          |              |                       | 44         | 76              |           |
| 83      | Standard    | u          |              |                       | 45         | 77              | 20        |
| 84      | Standard    | x          |              |                       | 45         | 78              |           |
| 85      | Standard    | v          |              |                       | 46         | 79              |           |
| 86      | Standard    | x          |              |                       | 46         | 80              |           |
| 87      | Standard    | u          |              |                       | 47         | 81              | 21        |
| 88      | Standard    | x          |              |                       | 47         | 82              |           |
| 89      | Standard    | v          |              | Pb                    | 48         | 83              |           |
| 90      | Standard    | x          |              |                       | 48         | 84              |           |
| 91      | Standard    | u          |              |                       | 49         | 85              | 22        |
| 92      | Standard    | x          |              |                       | 49         | 86              |           |
| 93      | Standard    | v          |              |                       | 50         | 87              |           |
| 94      | Standard    | x          |              |                       | 50         | 88              |           |
| 95      | Standard    | u          |              |                       | 51         | 89              |           |
| 96      | Standard    | x          |              |                       | 51         | 90              |           |
| 97      | Standard    | v          |              |                       | 52         | 91              |           |
| 98      | Standard    | x          |              |                       | 52         | 92              |           |
| 99      | Standard    | u          |              | Pb                    | 53         | 93              | 23        |
| 100     | Standard    | x          |              |                       | 53         | 94              |           |
| 101     | Standard    | v          |              |                       | 54         | 95              |           |
| 102     | Standard    | x          |              |                       | 54         | 96              |           |
| 103     | Standard    | u          |              |                       | 55         | 97              | 24        |
| 104     | Standard    | x          |              |                       | 55         | 98              |           |
| 105     | Standard    | v          |              |                       | 56         | 99              |           |
| 106     | Standard    | x          |              |                       | 56         | 100             | 25        |
| 107     | Standard    | u          |              |                       | 57         | 101             |           |
| 108     | Standard    | x          |              |                       | 57         | 102             | 26        |

| Region |          | DS ECAL Region |  | DS HCAL Region |     |
|--------|----------|----------------|--|----------------|-----|
| 109    | Standard | v              |  | 58             | 103 |
| 110    | Standard | x              |  | 58             | 104 |
| 111    | Standard | u              |  | 59             | 105 |
| 112    | Standard | x              |  | 59             | 106 |
| 113    | Standard | v              |  | 60             | 107 |
| 114    | Standard | x              |  | 60             | 108 |
| 115    | Standard | u              |  | 61             | 109 |
| 116    | Standard | x              |  | 61             | 110 |
| 117    | Standard | v              |  | 62             | 111 |
| 118    | Standard | x              |  | 62             | 112 |
| 119    | Standard | u              |  | 63             | 113 |
| 120    | Standard | x              |  | 63             | 114 |
| 121    | Standard | v              |  | 64             | 115 |
| 122    | Standard | x              |  | 64             | 116 |
| 123    | Standard | u              |  | 65             | 117 |
| 124    | Standard | x              |  | 65             | 118 |
| 125    | Standard | v              |  | 66             | 119 |
| 126    | Standard | x              |  | 66             | 120 |
| 127    | Standard | u              |  | 67             | 121 |
| 128    | Standard | x              |  | 67             | 122 |
| 129    | Standard | v              |  | 68             | 123 |
| 130    | Standard | x              |  | 68             | 124 |
| 131    | Standard | u              |  | 69             | 125 |
| 132    | Standard | x              |  | 69             | 126 |
| 133    | Standard | v              |  | 70             | 127 |
| 134    | Standard | x              |  | 70             | 128 |
| 135    | Standard | u              |  | 71             | 129 |
| 136    | Standard | x              |  | 71             | 130 |
| 137    | Standard | v              |  | 72             | 131 |
| 138    | Standard | x              |  | 72             | 132 |
| 139    | Standard | u              |  | 73             | 133 |
| 140    | Standard | x              |  | 73             | 134 |
| 141    | Standard | v              |  | 74             | 135 |
| 142    | Standard | x              |  | 74             | 136 |
| 143    | Standard | u              |  | 75             | 137 |
| 144    | Standard | x              |  | 75             | 138 |
| 145    | Standard | v              |  | 76             | 139 |
| 146    | Standard | x              |  | 76             | 140 |
| 147    | Standard | u              |  | 77             | 141 |
| 148    | Standard | x              |  | 77             | 142 |
| 149    | Standard | v              |  | 78             | 143 |
| 150    | Standard | x              |  | 78             | 144 |
| 151    | Standard | u              |  | 79             | 145 |
| 152    | Standard | x              |  | 79             | 146 |
| 153    | Standard | v              |  | 80             | 147 |
| 154    | Standard | x              |  | 80             | 148 |
| 155    | Standard | u              |  | 81             | 149 |
| 156    | Standard | x              |  | 81             | 150 |
| 157    | Standard | v              |  | 82             | 151 |
| 158    | Standard | x              |  | 82             | 152 |
| 159    | Standard | u              |  | 83             | 153 |
| 160    | Standard | x              |  | 83             | 154 |
| 161    | Standard | v              |  | 84             | 155 |
| 162    | Standard | x              |  | 84             | 156 |
| 163    | DS Ecal  | pb/v           |  | 85             | 157 |
| 164    | DS Ecal  | pb/x           |  | 85             | 158 |
| 165    | DS Ecal  | pb/u           |  | 86             | 159 |
| 166    | DS Ecal  | pb/x           |  | 86             | 160 |
| 167    | DS Ecal  | pb/v           |  | 87             | 161 |
| 168    | DS Ecal  | pb/x           |  | 87             | 162 |
| 169    | DS Ecal  | pb/u           |  | 88             | 163 |
| 170    | DS Ecal  | pb/x           |  | 88             | 164 |
| 171    | DS Ecal  | pb/v           |  | 89             | 165 |
| 172    | DS Ecal  | pb/x           |  | 89             | 166 |
| 173    | DS Ecal  | pb/u           |  | 90             | 167 |
| 174    | DS Ecal  | pb/x           |  | 90             | 168 |
| 175    | DS Ecal  | pb/v           |  | 91             | 169 |
| 176    | DS Ecal  | pb/x           |  | 91             | 170 |
| 177    | DS Ecal  | pb/u           |  | 92             | 171 |
| 178    | DS Ecal  | pb/x           |  | 92             | 172 |
| 179    | DS Ecal  | pb/v           |  | 93             | 173 |
| 180    | DS Ecal  | pb/x           |  | 93             | 174 |
| 181    | DS Ecal  | pb/u           |  | 94             | 175 |
| 182    | DS Ecal  | pb/x           |  | 94             | 176 |
| 183    | DS Hcal  | Fe             |  | 95             | 177 |
| 184    | DS Hcal  | x              |  | 95             | 178 |
| 185    | DS Hcal  | Fe             |  | 96             | 179 |
| 186    | DS Hcal  | v              |  | 96             | 180 |
| 187    | DS Hcal  | Fe             |  | 97             | 181 |
| 188    | DS Hcal  | x              |  | 97             | 182 |
| 189    | DS Hcal  | Fe             |  | 98             | 183 |
| 190    | DS Hcal  | u              |  | 98             | 184 |
| 191    | DS Hcal  | Fe             |  | 99             | 185 |
| 192    | DS Hcal  | x              |  | 99             | 186 |
| 193    | DS Hcal  | Fe             |  | 100            | 187 |
| 194    | DS Hcal  | v              |  | 100            | 188 |
| 195    | DS Hcal  | Fe             |  | 101            | 189 |
| 196    | DS Hcal  | x              |  | 101            | 190 |
| 197    | DS Hcal  | Fe             |  | 102            | 191 |
| 198    | DS Hcal  | u              |  | 102            | 192 |
| 199    | DS Hcal  | Fe             |  | 103            | 193 |
| 200    | DS Hcal  | x              |  | 103            | 194 |
| 201    | DS Hcal  | Fe             |  | 104            | 195 |
| 202    | DS Hcal  | v              |  | 104            | 196 |
| 203    | DS Hcal  | Fe             |  | 105            | 197 |
| 204    | DS Hcal  | x              |  | 105            | 198 |
| 205    | DS Hcal  | Fe             |  | 106            | 199 |
| 206    | DS Hcal  | u              |  | 106            | 200 |
| 207    | DS Hcal  | Fe             |  | 107            | 201 |
| 208    | DS Hcal  | x              |  | 107            | 202 |
| 209    | DS Hcal  | Fe             |  | 108            | 203 |
| 210    | DS Hcal  | v              |  | 108            | 204 |
| 211    | DS Hcal  | Fe             |  | 109            | 205 |
| 212    | DS Hcal  | x              |  | 109            | 206 |
| 213    | DS Hcal  | Fe             |  | 110            | 207 |
| 214    | DS Hcal  | u              |  | 110            | 208 |
| 215    | DS Hcal  | Fe             |  | 111            | 209 |
| 216    | DS Hcal  | x              |  | 111            | 210 |
| 217    | DS Hcal  | Fe             |  | 112            | 211 |
| 218    | DS Hcal  | v              |  | 112            | 212 |
| 219    | DS Hcal  | Fe             |  | 113            | 213 |
| 220    | DS Hcal  | x              |  | 113            | 214 |
| 221    | DS Hcal  | Fe             |  | 114            | 215 |
| 222    | DS Hcal  | u              |  | 114            | 216 |

| module type  | module # | section               |
|--------------|----------|-----------------------|
| iron curtain |          |                       |
| veto         |          |                       |
| veto         |          |                       |
| TARGET #1    | 1        | Nuclear target region |
| standard     | 2        | Nuclear target region |
| standard     | 3        | Nuclear target region |
| standard     | 4        | Nuclear target region |
| standard     | 5        | Nuclear target region |
| TARGET #2    | 6        | Nuclear target region |
| standard     | 7        | Nuclear target region |
| standard     | 8        | Nuclear target region |
| standard     | 9        | Nuclear target region |
| standard     | 10       | Nuclear target region |
| TARGET #3    | 11       | Nuclear target region |
| standard     | 12       | Nuclear target region |
| standard     | 13       | Nuclear target region |
| standard     | 14       | Nuclear target region |
| standard     | 15       | Nuclear target region |
| standard     | 16       | Nuclear target region |
| TARGET #4    | 17       | Nuclear target region |
| standard     | 18       | Nuclear target region |
| standard     | 19       | Nuclear target region |
| standard     | 20       | Nuclear target region |
| standard     | 21       | Nuclear target region |
| TARGET #5    | 22       | Nuclear target region |
| standard     | 23       | Nuclear target region |
| standard     | 24       | Nuclear target region |
| standard     | 25       | ACTIVE TARGET         |
| standard     | 26       | ACTIVE TARGET         |
| standard     | 27       | ACTIVE TARGET         |
| standard     | 28       | ACTIVE TARGET         |
| standard     | 29       | ACTIVE TARGET         |
| standard     | 30       | ACTIVE TARGET         |
| standard     | 31       | ACTIVE TARGET         |
| standard     | 32       | ACTIVE TARGET         |
| standard     | 33       | ACTIVE TARGET         |
| standard     | 34       | ACTIVE TARGET         |
| standard     | 35       | ACTIVE TARGET         |
| standard     | 36       | ACTIVE TARGET         |
| standard     | 37       | ACTIVE TARGET         |
| standard     | 38       | ACTIVE TARGET         |
| standard     | 39       | ACTIVE TARGET         |
| standard     | 40       | ACTIVE TARGET         |
| standard     | 41       | ACTIVE TARGET         |
| standard     | 42       | ACTIVE TARGET         |
| standard     | 43       | ACTIVE TARGET         |
| standard     | 44       | ACTIVE TARGET         |
| standard     | 45       | ACTIVE TARGET         |
| standard     | 46       | ACTIVE TARGET         |
| standard     | 47       | ACTIVE TARGET         |
| standard     | 48       | ACTIVE TARGET         |
| standard     | 49       | ACTIVE TARGET         |
| standard     | 50       | ACTIVE TARGET         |
| standard     | 51       | ACTIVE TARGET         |
| standard     | 52       | ACTIVE TARGET         |
| standard     | 53       | ACTIVE TARGET         |
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| standard     | 59       | ACTIVE TARGET         |
| standard     | 60       | ACTIVE TARGET         |
| standard     | 61       | ACTIVE TARGET         |
| standard     | 62       | ACTIVE TARGET         |
| standard     | 63       | ACTIVE TARGET         |
| standard     | 64       | ACTIVE TARGET         |
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| standard     | 66       | ACTIVE TARGET         |
| standard     | 67       | ACTIVE TARGET         |
| standard     | 68       | ACTIVE TARGET         |
| standard     | 69       | ACTIVE TARGET         |
| standard     | 70       | ACTIVE TARGET         |
| standard     | 71       | ACTIVE TARGET         |
| standard     | 72       | ACTIVE TARGET         |
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| standard     | 75       | ACTIVE TARGET         |
| standard     | 76       | ACTIVE TARGET         |
| standard     | 77       | ACTIVE TARGET         |
| standard     | 78       | ACTIVE TARGET         |
| standard     | 79       | ACTIVE TARGET         |
| standard     | 80       | ACTIVE TARGET         |
| standard     | 81       | ACTIVE TARGET         |
| standard     | 82       | ACTIVE TARGET         |
| standard     | 83       | ACTIVE TARGET         |
| standard     | 84       | ACTIVE TARGET         |
| DS ecal      | 85       | DSECAL                |
| DS ecal      | 86       | DSECAL                |
| DS ecal      | 87       | DSECAL                |
| DS ecal      | 88       | DSECAL                |
| DS ecal      | 89       | DSECAL                |
| DS ecal      | 90       | DSECAL                |
| DS ecal      | 91       | DSECAL                |
| DS ecal      | 92       | DSECAL                |
| DS ecal      | 93       | DSECAL                |
| DS ecal      | 94       | DSECAL                |
| DS hcal      | 95       | DSHCAL                |
| DS hcal      | 96       | DSHCAL                |
| DS hcal      | 97       | DSHCAL                |
| DS hcal      | 98       | DSHCAL                |
| DS hcal      | 99       | DSHCAL                |
| DS hcal      | 100      | DSHCAL                |
| DS hcal      | 101      | DSHCAL                |
| DS hcal      | 102      | DSHCAL                |
| DS hcal      | 103      | DSHCAL                |
| DS hcal      | 104      | DSHCAL                |
| DS hcal      | 105      | DSHCAL                |
| DS hcal      | 106      | DSHCAL                |
| DS hcal      | 107      | DSHCAL                |
| DS hcal      | 108      | DSHCAL                |
| DS hcal      | 109      | DSHCAL                |
| DS hcal      | 110      | DSHCAL                |
| DS hcal      | 111      | DSHCAL                |
| DS hcal      | 112      | DSHCAL                |
| DS hcal      | 113      | DSHCAL                |
| DS hcal      | 114      | DSHCAL                |

## module types

Standard

u

x

v

x

contents  
of 1  
module

contents  
of 1  
module

DS Ecal

pb/u

pb/x

contents  
of 1  
module

pb/v

pb/x

contents  
of 1  
module

DS Hcal

Fe

x

contents  
of 1  
module

Fe

u

contents  
of 1  
module

Fe

x

contents  
of 1  
module

Fe

v

contents  
of 1  
module

| <b>Detector Section</b> | <b>Frames</b> | <b>Scintillators</b> | <b>Fe planes</b> | <b>Pb planes</b> | <b>Structure</b>    |
|-------------------------|---------------|----------------------|------------------|------------------|---------------------|
| Nuclear target region   | 24            | 36                   |                  |                  | T,S,S,S,S           |
| ACTIVE TARGET           | 60            | 120                  |                  |                  | S, S, S, S          |
| DSECAL                  | 10            | 20                   |                  | 20               | Pb, S, Pb, S, Pb, S |
| DSHCAL                  | 20            | 20                   | 20               |                  | Fe, S, Fe, S        |
| totals                  | 114           | 196                  | 20               | 20               |                     |

Design as of 01/2006

1 Module= 1 Frame

1 Group= 2 repeating Modules